

WHAT IS CLAIMED IS:

1. A method for preparing a donor cell for nuclear transfer, comprising the steps of:

(a) applying electrical stimulation to donor cells; and

5 (b) conducting synchronous culture of the electrically stimulated donor cells to a metaphase stage.

2. The method for preparing a donor cell for nuclear transfer according to claim 1, wherein the electrical stimulation is conducted at a voltage of 200 to 350 V, a condenser value of 900 to 1000 uF,
10 and a resistance value of infinity, for 10 to 30 msec.

3. The method for preparing a donor cell for nuclear transfer according to claim 1, wherein the method further comprises the step of reacting the electrically stimulated donor cells of the step (a) with an antibody against a membrane antigen marker that is specific to
15 undifferentiated cells to select undifferentiated donor cells, before the step of (b).

4. The method for preparing a donor cell for nuclear transfer according to claim 1, wherein the donor cell is an embryo stem cell.

5. The method for preparing a donor cell for nuclear transfer
20 according to claim 1, wherein chromosomes of the donor cell are modified by genetic engineering means.

6. The method for preparing a donor cell for nuclear transfer according to claim 1, wherein the nuclear transfer is cell fusion.

7. A method for preparing a donor cell for nuclear transfer,

comprising the steps of:

(a) reacting donor cells with an antibody against a membrane antigen marker that is specifically expressed in undifferentiated cells;

(b) identifying an antigen-antibody reaction in the reacted
5 donor cells to select undifferentiated donor cells; and

(c) conducting synchronous culture of the undifferentiated donor cells to a metaphase stage.

8. The method for preparing a donor cell for nuclear transfer according to claim 7, wherein the membrane antigen marker that is
10 specifically expressed in undifferentiated cells is selected from the group consisting of SSEA-1 (stage-specific embryonic antigen-1), CD117(c-kit), sca-1 (Stem Cell Antigen), and CD31 (PECAM-1, Platelet Endothelial Cell Adhesion Molecule-1).

9. The method for preparing a donor cell for nuclear transfer
15 according to claim 7, wherein the donor cell is an embryonic stem cell.

10. The method for preparing a donor cell for nuclear transfer according to claim 7, wherein chromosomes of the donor cell are further modified by genetic engineering means.

11. The method for preparing a donor cell for nuclear transfer
20 according to claim 7, wherein the nuclear transfer is cell fusion.

12. A method of nuclear transfer comprising the steps of:

(a) preparing a donor cell by the method of claim 1; and

(b) conducting nuclear transfer of the prepared donor cell into a recipient cell from which chromosomes are removed.

13. A method of nuclear transfer comprising the steps of:
- (a) preparing a donor cell by the method of claim 7; and
 - (b) conducting nuclear transfer of the prepared donor cell into a recipient cell from which chromosomes are removed
- 5 14. A method for producing an animal comprising the steps of:
- (a) reconstituting an animal embryo by the method of claim 12; and
 - (b) generating an animal from the reconstituted embryo.
15. A method for producing an animal comprising the steps of:
- 10 (a) reconstituting an animal embryo by the method of claim 13; and
- (b) generating an animal from the reconstituted embryo.
16. A donor cell for nuclear transfer prepared by the method of claim 1.
- 15 17. A donor cell for nuclear transfer prepared by the method of claim 7.
18. A reconstituted embryo prepared by the nuclear transfer method of claim 12.
19. A reconstituted embryo prepared by the nuclear transfer method
- 20 of claim 13.
20. An animal produced by the method of claim 14.
21. An animal produced by the method of claim 15.